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10/575,044	03/07/2007	Francois Dolivo	CH920030059US1	5955
48915 7590 12/27/2010 CANTOR COLBURN LLP-IBM YORKTOWN 20 Church Street 22nd Floor Hartford, CT 06103				
EXAMINER				
ZELASKIEWICZ, CHRYSTINA E				
ART UNIT		PAPER NUMBER		
3621				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

usptopatentmail@cantorcolburn.com

### Office Action Summary

**Application No.**

10/575,044

**Applicant(s)**

DOLIVO ET AL.

**Examiner**

CHRYSTINA ZELASKIEWICZ

**Art Unit**

3621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 July 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 4-16, 18-25 and 29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 4-16, 18-25 and 29 is/are rejected.
- 7) ☒ Claim(s) 4 and 6-8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Correspondence Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date September 8, 2010
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

#### **Continued Examination Under 37 CFR 1.114**

1. A request for continued examination (RCE) under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 21, 2010 has been entered.

#### **Acknowledgements**

2. This action is in reply to the RCE filed on July 21, 2010.
3. Claims 1, 4-16, 18-25, and 29 are pending.
4. Claims 2-3, 17, 26-28, and 30-70 have been cancelled.
5. Claims 1, 4-16, 18-25, and 29 have been examined.

#### **Information Disclosure Statement**

6. The Information Disclosure Statement filed on September 8, 2010 has been considered. An initialed copy of the Form 1449 is enclosed herewith.

#### **Claim Objections**

7. Claims 4 and 6-8 are objected to because they depend from claim 3, which was cancelled. Appropriate correction is required.

**Claim Rejections - 35 USC § 103**

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1, 4-16, 18-25, and 29 are rejected under 35 U.S.C. §103(a) as being unpatentable over Girault et al. (US 5,768,379), in view of Arnold (US 6,456,716), and further in view of Boman et al. (US 7,564,350).

**Claim 1**

10. Girault discloses the following limitations:
- a. which container control certificate is digitally signed (signature) by the first entity (user) (C2 L8 – C3 L20);
  - b. storing (stored, see C2 L8-18) the container control certificate (signature, see C2 L8-18) in the log (portable storage device, see C2 L8-18) of the electronic seal;
  - c. verifying (verification, see C2 L65 – C3 L2) the signed container control certificate (signature, see C2 L65 – C3 L2) by a corresponding function

(production algorithm, see abstract, C2 L8 – C3 L67) implemented in the electronic seal.

11. Girault does not disclose the following limitations:
  - d. an electronic container control certificate... first entity;
  - e. the electronic container control certificate... second entity;
  - f. receiving through an interface... container;
  - g. the electronic seal... interface;
  - h. receiving in the electronic seal... first and second entities.
12. Arnold teaches the following limitations:
  - i. an electronic container control certificate (certificate, C3 L8-35) associated with a first entity (element A, C3 L8-35);
  - j. the electronic container control certificate (certificate, C3 L8-35) comprises a cryptographic key (public key of authority to decrypt) associated to the second entity (element B, C3 L8-35).
13. Boman teaches the following limitations:
  - k. receiving through an interface of an electronic seal (device 12, see abstract, C6 L9-36, C7 L34-67) associated with the container (container, see abstract, C6 L9-36);
  - l. the electronic seal (device 12, see abstract, C6 L9-36, C7 L34-67) including a log (log file, see C8 L8-39) for recording data (e.g. door events, temperature readings, see C8 L22-39) and a control unit (e.g. door sensor, see

C12 L1-19) for verifying data received through the interface (whether security breach has occurred, see C12 L1-19);

m. receiving in the electronic seal (device 12, see abstract, C6 L9-36) associated with the container (container, see abstract, C6 L9-36), geographic location data (GPS data, see C6 L9-36) from a location recording device (reader 16, see abstract, C6 L9-36) associated with one of the first and second entities.

14. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the portable storage device of Girault, with the certificate of Arnold, and the electronic seal with location data of Boman because 1) a need exists for a system that can provide secured access (Girault C1 L14-65); 2) a need exists for a secure, but relatively inexpensive cryptographic system (Arnold C1 L15 – C3 L61); and 3) a need exists for tracking transport movements of containers for reasons of security and logistics efficiency (Boman C3 L15-25). Use of an electronic container control certificate will help to promote authentication (Arnold C2 L52-67). An electronic seal that provides location data can be used to secure, track, and determine the integrity of a container (Boman C6 L9-36).

15. Alternatively, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the portable storage device of Girault, with the certificate of Arnold, and the electronic seal with location data of Boman since the claimed invention is merely a combination of old elements, and in the combination each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination

were predictable. Use of an electronic container control certificate will help to promote authentication (Arnold C2 L52-67). An electronic seal that provides location data can be used to secure, track, and determine the integrity of a container (Boman C6 L9-36).

Claim 4

16. Girault, in view of Arnold and Boman, discloses the limitations above. Furthermore, Girault discloses the following limitations:

- n. verifying the digital signature of the container control certificate by applying decrypt information (data element) stored in the log of the electronic seal and delivered to the log by a previous entity of the transportation chain (abstract, C2 L8 – C3 L67).

Claim 5

17. Girault, in view of Arnold and Boman, discloses the limitations above. Furthermore, Girault discloses the following limitations:

- o. the verification is considered to be failed (signature computed is not equal to signature read) if the signed container control certificate cannot be decrypted with the decrypt information stored in the log (verification algorithm) (abstract, C2 L8 – C4 L40).

Claim 6

18. Girault, in view of Arnold and Boman, discloses the limitations above.

Furthermore, Girault discloses the following limitations:

- p. a status of a container lock is subject to the result of the signature verification process (verification of the signature) (abstract, C2 L8 – C3 L20).

#### Claim 7

19. Girault, in view of Arnold and Boman, discloses the limitations above. Girault does not disclose the following limitations:

- q. The electronic seal issues... fails.

20. Furthermore, Arnold teaches the following limitations:

- r. the electronic seal issues a warning (error condition) if the verification of the signature fails (C13 L55-65).

21. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the portable storage device of Girault, with the warning of signature failure of Arnold, and the electronic seal of Boman because 1) a need exists for a system that can provide secured access (Girault C1 L14-65); 2) a need exists for a secure, but relatively inexpensive cryptographic system (Arnold C1 L15 – C3 L61); and 3) a need exists for tracking transport movements of containers for reasons of security and logistics efficiency (Boman C3 L15-25). A seal to issue a warning if verification fails will help ensure only authorized access (Arnold C13 L55-65).

#### Claim 8



22. Girault, in view of Arnold and Boman, discloses the limitations above.

Furthermore, Girault discloses the following limitations:

- s. the container control certificate (signature and data) is stored in the log (portable storage device) if the verification succeeds (signature computed is equal to signature read) (abstract, C2 L8 – C4 L40).

#### Claim 9

23. Girault, in view of Arnold and Boman, discloses the limitations above.

Furthermore, Girault discloses the following limitations:

- t. the cryptographic key (verification key) associated to the second entity is used by the electronic seal for decrypting data expected to be received from the second entity (abstract, C2 L8 – C4 L40).

#### Claim 10

24. Girault, in view of Arnold and Boman, discloses the limitations above.

Furthermore, Girault discloses the following limitations:

- u. the electronic seal is designed for controlling a lock of the container (building lock) (abstract, C6 L12-18).

#### Claim 11

25. Girault, in view of Arnold and Boman, discloses the limitations above.

Furthermore, Girault discloses the following limitations:

- v. an asymmetric cryptographic key system (public key, RSA algorithm) is used for digitally signing the container control certificate (C4 L58 – C5 L22).

Claim 12

26. Girault, in view of Arnold and Boman, discloses the limitations above.

Furthermore, Girault discloses the following limitations:

- w. a public - private key system (public key, RSA algorithm) is used for digitally signing the container control certificate (C4 L58 – C5 L22).

Claim 13

27. Girault, in view of Arnold and Boman, discloses the limitations above. Girault does not disclose the following limitations:

- x. The container control certificate... private key,
28. Furthermore, Arnold teaches the following limitations:
- y. the container control certificate is signed using a private key (secret key, see C2 L52 - C3 L35) associated to the first entity.
29. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the portable storage device of Girault, with the private key signature of Arnold, and the electronic seal of Boman because 1) a need exists for a system that can provide secured access (Girault C1 L14-65); 2) a need exists for a secure, but relatively inexpensive cryptographic system (Arnold C1 L15 – C3 L61); and 3) a need exists for tracking transport movements of containers for reasons of security

and logistics efficiency (Boman C3 L15-25). A certificate signed using a private key will help ensure secured access (Arnold C2 L52 - C3 L35).

Claim 14

30. Girault, in view of Arnold and Boman, discloses the limitations above. Girault does not disclose the following limitations:

z. The container control certificate... first entity.

31. Furthermore, Arnold teaches the following limitations:

aa. the container control certificate is signed using a private key (private key) associated to the first entity and the decrypt information stored in the log comprises a public key (public key) of the first entity (C2 L52 - C3 L35).

32. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the portable storage device of Girault, with the private key and public key of Arnold, and the electronic seal of Boman because 1) a need exists for a system that can provide secured access (Girault C1 L14-65); 2) a need exists for a secure, but relatively inexpensive cryptographic system (Arnold C1 L15 - C3 L61); and 3) a need exists for tracking transport movements of containers for reasons of security and logistics efficiency (Boman C3 L15-25). A certificate signed using a private key will help ensure secured access (Arnold C2 L52 - C3 L35).

Claim 15

33. Girault, in view of Arnold and Boman, discloses the limitations above. Girault does not disclose the following limitations:

bb. The first entity... authority.

34. Furthermore, Arnold teaches the following limitations:

cc. the first entity receives the cryptographic key associated to the second entity from a certificate authority (authority T) (C2 L52 - C3 L35).

35. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the portable storage device of Girault, with the cryptographic key of Arnold, and the electronic seal of Boman because 1) a need exists for a system that can provide secured access (Girault C1 L14-65); 2) a need exists for a secure, but relatively inexpensive cryptographic system (Arnold C1 L15 – C3 L61); and 3) a need exists for tracking transport movements of containers for reasons of security and logistics efficiency (Boman C3 L15-25). Receiving a key from a certificate authority will help ensure secured access (Arnold C2 L52 - C3 L35).

#### Claim 16

36. Girault, in view of Arnold and Boman, discloses the limitations above. Girault does not disclose the following limitations:

dd. The container control certificate... container.

37. Furthermore, Boman teaches the following limitations:

ee. the container control certificate comprises identification data for the container (code that uniquely identifies the container, see C8 L7-21).

38. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the portable storage device of Girault, in view of Arnold, with the container identification data of Boman because 1) a need exists for a system that can provide secured access (Girault C1 L14-65); 2) a need exists for a secure, but relatively inexpensive cryptographic system (Arnold C1 L15 – C3 L61); and 3) a need exists for tracking transport movements of containers for reasons of security and logistics efficiency (Boman C3 L15-25). Uniquely identifying the container will assist in tracking its history (Boman C8 L7-21).

Claim 18

39. Girault, in view of Arnold and Boman, discloses the limitations above. Furthermore, Girault discloses the following limitations:

- ff. the location data is digitally signed (signature) by the associated entity (C2 L8 – C4 L40, C6 L5-11).

Claim 19

40. Girault, in view of Arnold and Boman, discloses the limitations above. Furthermore, Girault discloses the following limitations:

- gg. the signed location data is stored in a log of the electronic seal (electronic lock) (C2 L8 – C4 L40, C6 L5-11).

Claim 20

41. Girault, in view of Arnold and Boman, discloses the limitations above.

Furthermore, Girault discloses the following limitations:

- hh. verifying the signed location data by a corresponding function (production algorithm) implemented in the electronic seal (C2 L8 – C4 L40, C6 L5-11).

#### Claim 21

42. Girault, in view of Arnold and Boman, discloses the limitations above.

Furthermore, Girault discloses the following limitations:

- ii. verifying the digital signature of the location data by applying decrypt information (data element) stored in the log of the electronic seal and delivered to the log by a previous entity of the transportation chain (C2 L8 – C4 L40, C6 L5-11).

#### Claim 22

43. Girault, in view of Arnold and Boman, discloses the limitations above.

Furthermore, Girault discloses the following limitations:

- jj. the verification is considered to be failed (signature computed is not equal to signature read), if the signed location data cannot be decrypted with decrypt information stored in the log (verification algorithm) (abstract, C2 L8 – C4 L40).

#### Claim 23

44. Girault, in view of Arnold and Boman, discloses the limitations above.

Furthermore, Girault discloses the following limitations:

kk. recording the location data in the log (portable storage device) of the electronic seal is subject to a result of the signature verification process (signature computed is equal to signature read) (abstract, C2 L8 – C4 L40).

#### Claim 24

45. Girault, in view of Arnold and Boman, discloses the limitations above. Girault does not disclose the following limitations:

ll. The electronic seal transmits... entities.

46. Furthermore, Arnold teaches the following limitations:

mm. the electronic seal transmits container identification information (location information) to a location recording device associated to one of the entities (C24 L40-62, C26 L37-51).

47. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the portable storage device of Girault, with the identification information of Arnold, and the electronic seal of Boman because 1) a need exists for a system that can provide secured access (Girault C1 L14-65); 2) a need exists for a secure, but relatively inexpensive cryptographic system (Arnold C1 L15 – C3 L61); and 3) a need exists for tracking transport movements of containers for reasons of security and logistics efficiency (Boman C3 L15-25). A seal with identification information will help ensure secured access (Arnold C24 L40-62, C26 L37-51).

Claim 25

48. Girault, in view of Arnold and Boman, discloses the limitations above. Girault does not disclose the following limitations:

nn. The transmitted container... second entity.

49. Furthermore, Arnold teaches the following limitations:

oo. the transmitted container identification information is digitally signed (signed copy) by a second entity (C24 L40 - C25 L10).

50. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the portable storage device of Girault, with the signed identification information of Arnold, and the electronic seal of Boman because 1) a need exists for a system that can provide secured access (Girault C1 L14-65); 2) a need exists for a secure, but relatively inexpensive cryptographic system (Arnold C1 L15 – C3 L61); and 3) a need exists for tracking transport movements of containers for reasons of security and logistics efficiency (Boman C3 L15-25). Having the identification information digitally signed will help ensure secured access (Arnold C24 L40 - C25 L10).

Claim 29

51. Girault, in view of Arnold and Boman, discloses the limitations above. Girault does not disclose the following limitations:

pp. A log for storing... interface.

52. Furthermore, Arnold teaches the following limitations:



qq. a log for storing a cryptographic key associated to the certificate authority for decrypting information received from the certificate authority via the certificate authority interface (C14 L15-21).

53. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the portable storage device of Girault, with the log of Arnold, and the electronic seal of Boman because 1) a need exists for a system that can provide secured access (Girault C1 L14-65); 2) a need exists for a secure, but relatively inexpensive cryptographic system (Arnold C1 L15 – C3 L61); and 3) a need exists for tracking transport movements of containers for reasons of security and logistics efficiency (Boman C3 L15-25). A log for storing a key will help ensure secured access (Arnold C14 L15-21).

### **Response to Arguments**

54. Applicant argues that Arnold does not teach “transferring a container control certificate including a cryptographic key to an electronic seal for a container” in claim 1 (RCE p 6-7).

rr. This argument is moot in light of the new art above.

55. Applicant argues that Yagesh does not teach “receiving in the electronic seal associated with the container geographic location data... entities” in claim 1 (RCE p 7).

ss. This argument is moot in light of the new art above.

56. Applicant argues that Girault does not disclose storing container control certificates in the electronic seal or verifying the control certificate through a function implemented in the electronic seal (RCE p 7).

tt. Examiner disagrees. Girault discloses storing (stored, see C2 L8-18) the container control certificate (signature, see C2 L8-18) in the log (portable storage device, see C2 L8-18) of the electronic seal; and verifying (verification, see C2 L65 – C3 L2) the signed container control certificate (signature, see C2 L65 – C3 L2) by a corresponding function (production algorithm, see abstract, C2 L8 – C3 L67) implemented in the electronic seal.

### **Claim Interpretation**

57. Examiner finds that because the examined claims recite neither “step for” nor “means for”, the examined claims fail Prong (A) as set forth in MPEP § 2181 I. Because all examined claims fail Prong (A), Examiner concludes that all examined claims do not invoke 35 U.S.C. 112, 6<sup>th</sup> paragraph. See also *Ex parte Miyazaki*, 89 USPQ2d 1207, 1215-16 (B.P.A.I. 2008) (precedential).

uu. Should Applicants amend the claims to recite “means for”, Applicants are respectfully reminded that the specification must have proper antecedent basis for the claimed subject matter. See 37 C.F.R. § 1.75(d)(1), MPEP § 608.01(o), and MPEP § 2181 IV.

58. After careful review of the original specification and unless expressly noted otherwise by Examiner, Examiner concludes that Applicants are not their own lexicographer. See MPEP § 2111.01 IV.

59. Examiner hereby adopts the following definitions under the broadest reasonable interpretation standard. In accordance with *In re Morris*, 127 F.3d 1048, 1056, 44 USPQ2d 1023, 1029 (Fed. Cir. 1997), Examiner points to these other sources to support his interpretation of the claims.<sup>1</sup> Additionally, these definitions are only a guide to claim terminology since claim terms must be interpreted in context of the surrounding claim language. Finally, the following list is not intended to be exhaustive in any way:

vv. **interface** "2 Software that enables a program to work with the user (the user interface, which can be a command-line interface, menu-driven, or a graphical user interface), with another program such as the operating system, or with the computer's hardware." Computer Dictionary, 3<sup>rd</sup> Edition, Microsoft Press, Redmond, WA, 1997.

ww. **log** "1 A record of transactions or activities that take place on a computer system." Computer Dictionary, 3<sup>rd</sup> Edition, Microsoft Press, Redmond, WA, 1997.

xx. **unit** "(3) A software component that is not subdivided into other components." IEEE Standard Computer Dictionary, The Institute of Electrical and Electronics Engineers, New York, NY, 1990.

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<sup>1</sup> While most definitions are cited because these terms are found in the claims, Examiner may have provided additional definition(s) to help interpret words, phrases, or concepts found in the definitions themselves or in the prior art.

60. Note, in this case claim 1 is a method claim that recites the limitation "the electronic seal including a log for recording data." Because the electronic seal includes a log (i.e. some type of storage) for recording data, Examiner interprets claims 1, 4-16, 18-25, and 29 as tied to a machine. Additionally, the limitation "receiving through an interface of an electronic seal associated with the container an electronic container control certificate" inherently requires a machine to receive the electronic data.

### **Conclusion**

61. Any inquiry of a general nature or relating to the status of this application or concerning this communication or earlier communications from the Examiner should be directed to Chrystina Zelaskiewicz whose telephone number is 571.270.3940. The Examiner can normally be reached on Monday-Friday, 9:30am-5:00pm. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Andrew Fischer can be reached at 571.272.6779.

62. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://portal.uspto.gov/external/portal/pair> <<http://pair-direct.uspto.gov>>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866.217.9197 (toll-free).

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/Chrystina Zelaskiewicz/  
Examiner, Art Unit 3621  
December 20, 2010